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WO 95/34972 A1   WO 95/12292 A1   WO 94/06236 A2
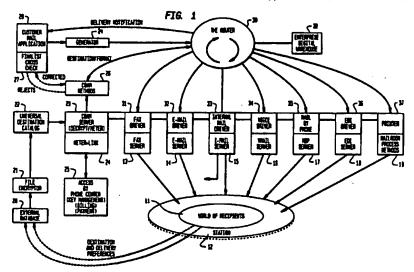WO 93/07566 A1   US 5283887 A   US 4837798 A
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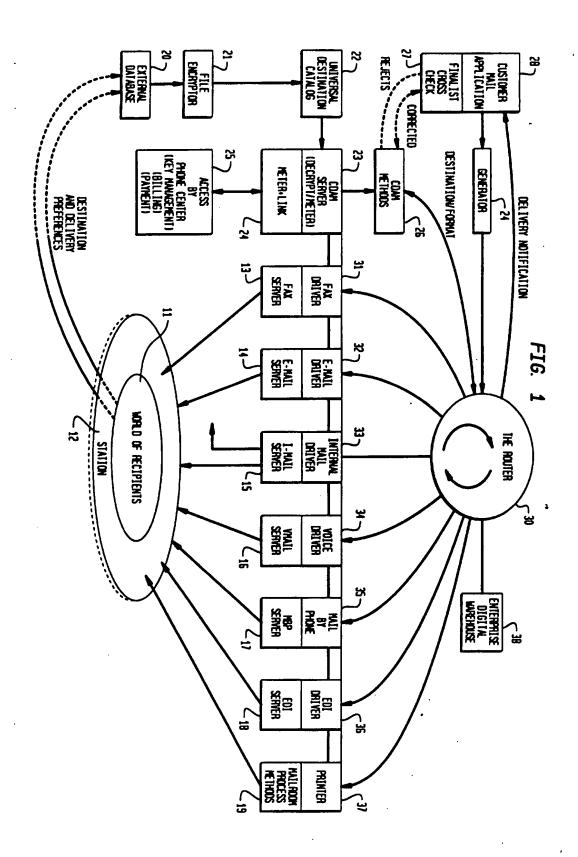H04M 3/42 3/50 11/06 , H04Q 7/22
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(54) Universal directory for determining addresses and accurately routing messages

(57) This invention provides a secured method for finding the receiver of a message and a secured method for requesting from a receiver of multi media data, the media in which the receiver would like specified data transmitted. The media means the type of data or message and the carrier associated with that message. All the needed information would be in the Controlled Data Access Management (CDAM) (23). The CDAM is a server (23) that provides controlled access to users of the server. The CDAM server (23) consists of a computer that accesses a universal destination catalog that maintains the encrypted name, destination(s).

FIG. 1

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At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.
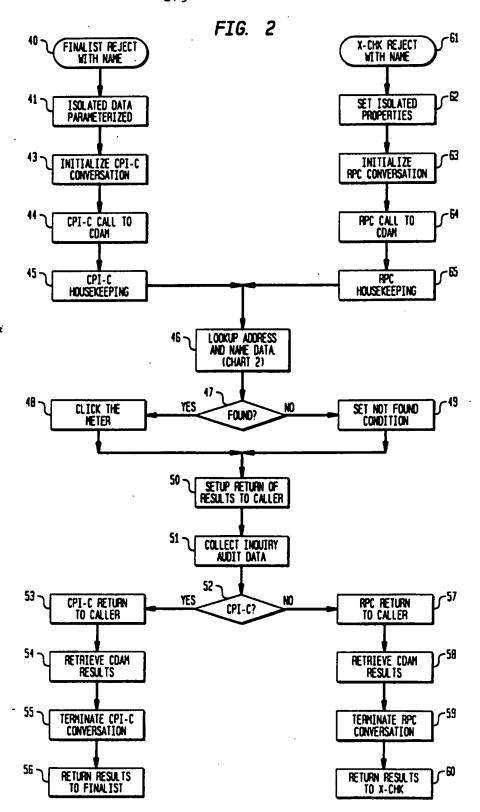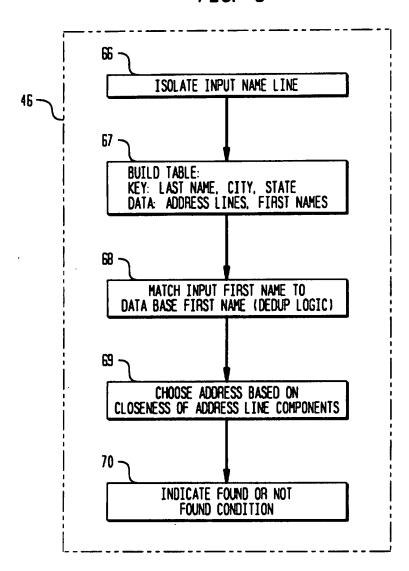
FIG. 1

FIG. 2

FIG. 2 flowchart:

40 — FINALIST REJECT WITH NAME
41 — ISOLATED DATA PARAMETERIZED
43 — INITIALIZE CPI-C CONVERSATION
44 — CPI-C CALL TO CDAM
45 — CPI-C HOUSEKEEPING

61 — X-CHK REJECT WITH NAME
62 — SET ISOLATED PROPERTIES
63 — INITIALIZE RPC CONVERSATION
64 — RPC CALL TO CDAM
65 — RPC HOUSEKEEPING

46 — LOOKUP ADDRESS AND NAME DATA (CHART 2)
47 — FOUND?
48 — CLICK THE METER (YES)
49 — SET NOT FOUND CONDITION (NO)
50 — SETUP RETURN OF RESULTS TO CALLER
51 — COLLECT INQUIRY AUDIT DATA
52 — CPI-C?

53 — CPI-C RETURN TO CALLER (YES)
54 — RETRIEVE CDAM RESULTS
55 — TERMINATE CPI-C CONVERSATION
56 — RETURN RESULTS TO FINALIST

57 — RPC RETURN TO CALLER (NO)
58 — RETRIEVE CDAM RESULTS
59 — TERMINATE RPC CONVERSATION
60 — RETURN RESULTS TO X-CHK

FIG. 3

66 — ISOLATE INPUT NAME LINE

67 — BUILD TABLE:
KEY: LAST NAME, CITY, STATE
DATA: ADDRESS LINES, FIRST NAMES

68 — MATCH INPUT FIRST NAME TO
DATA BASE FIRST NAME (DEDUP LOGIC)

69 — CHOOSE ADDRESS BASED ON
CLOSENESS OF ADDRESS LINE COMPONENTS

70 — INDICATE FOUND OR NOT
FOUND CONDITION

46

FIG. 4

71 ── EXTRACT NAME AND ADDRESS DATA FROM
3RD PARTY DATA BASE SUPPLIER

72 ── ISOLATE ADDRESS DATA ELEMENTS IN
ADDRESS LINE DATA

73 ── CREATE STRUCTURES FOR EACH ADDRESS LINE
WITH ISOLATED DATA

74 ── ISOLATE NAME DATA AND CITY, STATE, ZIP

75 ── BUILD TABLE: KEY: LAST NAME, CITY, STATE
DATA: ADDRESS LINES, FIRST NAMES

76 ── ENCRYPT AND STORE ON DATA BASE

FIG. 5

77 — FILE OPTIONS

78 — OPEN AUDIT FILE

79 — CLOSE AUDIT FILE

80 — SWITCH AUDIT FILES

81 — CREATE NEW AUDIT FILE

83 — AUDIT FILE

82 — VIEW AUDIT FILE

84 — VIEW ENTIRE AUDIT FILE

85 — VIEW SELECTED ID'S

86 — VIEW SELECTED DATE/TIME

87 — VIEW SELECTED HITS

88 — VIEW STATISTICS

Universal Directory For Determining Addresses And Accurately Routing Messages

The invention relates generally to the field of controlled information transmission systems and more particularly to controlled information
5   distribution systems.

From the dawn of civilization people have directly transmitted information from one person to another. Information was first transmitted by speech and later by the written word. Writings enabled people to transmit information by messengers from a location in which the sender of the writing
10 was present to another location where the receiver was present. In time, postal services were developed in which a person would deliver a letter to the post office in one city and an agent of the post office would deliver that letter to a post office in another city, where the letter would be picked up by the person to whom the letter was sent. Ever since the numeric codification of streets and
15 buildings received general acceptance, an individuals' name and their household postal addresses have been linked.

   With the advent of general local and then national telephone service, a second numbering system was developed based on the location of the telephone, that was assigned to a particular individual. This second number
20 was tied by tradition to the individuals numeric household address.

   Cellular telephone services have been developed in which the cellular telephone can be moved from one location to another. The cellular telephone is assigned a numeric identification number. When the cellular telephone is in the roaming mode i.e., being moved from one location to another the cellular
25 telephone network needs a little help from the user of the cellular telephone to establish the location of the cellular telephone.

   Facsimile machines, that utilize the telephone network, have been developed to transmit information from one facsimile machine to another.

Computers that utilize modems and the telephone network have been developed to transmit information from one computer to another. Currently, information may also be transmitted from one location to another by a smart telephone, i.e., a telephone having a screen and a keyboard and information

5   may also be transmitted by cable television i.e., invoices.

Currently, individuals are receiving information by mail, telephone, cellular telephone, facsimile machine, computer, and cable television. A disadvantage of the prior art is that the recipient of the information usually does not have anything to say regarding the mode of transmission in which the

10   recipient will receive specified information. Thus, certain information which the recipient considers private or privileged information may be transmitted by a media that is not private i.e., facsimile, etc.

Another disadvantage of the prior art is that the format of the information transmitted by the sender is not necessarily the format desired by the receiver

15   of the information. For instance, the receiver may want information transmitted verbally by telephone in a specified format that is used by the receiver's personal computer.

Currently, if senders of information allowed their receivers to specify the mode of transmission in which they would like to have their information

20   transmitted, every sender of information would have to request the preferred mode of transmission from every receiver. Thus, every receiver would have to submit individual selection to each sender i.e., electric company, phone company, cable company, mortgage company, book club, etc. Hence, numerous communications would be required causing each sender of

25   information to be overwhelmed with many requests.

An object of the invention is to provide a secured method for finding the receiver of a message and a secured method for requesting from a receiver of multi media data, the media in which the receiver would like specified data transmitted. The media means the type of data or message and the carrier

30   associated with that message i.e., letter mail might be the United States Postal

Service, electronic mail might be America On Line and the telephone company, etc.

All the needed information would be in the Controlled Data Access Management (CDAM). The CDAM is a server that provides controlled access

5 to users of the server. The CDAM server consists of a computer that accesses an internal universal destination catalog that maintains the encrypted name, destination(s) i.e., addresses, telephone number, etc., delivery preferences and demographics of receivers who supplied information regarding their preferences.

10 For a better understanding of the invention, and to show how the same may be carried into effect, reference will now be made, by way of example, to the accompanying drawings, in which:

Fig. 1 is a drawing of a multi media message routing system;

Fig. is a flow chart of the Finalist and CROSSCHECK software linkages;

15 Fig. 3 is a flow chart of the Look Up Address and Name Data subroutine, block 46 of Fig. 2;

Fig. 4 is a flow chart that describes how to build the database; and

Fig. 5 is a flow chart of the Audit database inquiry.

Referring now to the drawings in detail, and more particularly to Fig. 1,

20 the reference character 11 represents the world of recipients or everyone who is currently receiving mail or telephone service, etc. Recipients do not currently select the media in which they receive information. Recipients or people who elect to select the media in which they want to receive specified information supply their name, destination(s), delivery preferences and demographics to a

25 central data collection station 12. The information received by station 12 may have been transmitted by Facsimile server 13, electronic mail server 14, internal mail server 15, voice mail server 16, mail by phone server 17, EDI server 18 (Electronic Data Interface), conventional mail 19, or any other method known in the art to transmit information.

30 Station 12 transmits the destination and delivery preferences of the people or recipients who supplied information to external database 20. The

information contained in database 20 is transmitted to file encryptor 21. Encryptor 21 encrypts the information received by database 20. Encryptor 21 can be any one of a large number of encrypting devices including those devices which use the Data Encryption Standards described in FIPS PUB 46,

5 dated Jan, 15, 1977 and published by the United States Department Of Commerce, National Bureau of Standards, herein incorporated by reference. In addition, a standard encryption scheme, such as the RSA encryption technique, can also be used for encryptor 21. It will be obvious to one skilled in the art that different public and private encryption keys may be utilized. The

10 information encrypted by encryptor 21 is distributed to universal destination catalog 22. Catalog 22 stores the encrypted name, destination(s), i.e., addresses, telephone numbers, etc., delivery preferences and demographics of the people and recipients who supplied the information. The information contained in catalog 22 may be written on a CD or any other media known in

15 the art.

The information contained in catalog 22 is accessed by Controlled Data Access Management (CDAM) server 23. Server 23 is coupled to meter-link 24 and meter-link 24 is coupled to access by phone center 25. Center 25 is a billing and payment center that is in communication from time to time with

20 CDAM server 23. Server 23 decrypts the information specified by center 25 when proper payment is recorded i.e., the correct physical address for the recipient is obtained. Server 23 is a server that consists of a computer that accesses a universal destination catalog that maintains the encrypted name, destination(s) i.e., addresses, telephone number, etc., delivery preferences

25 and demographics of receivers who supplied information regarding their preferences.

The output of server 23 is coupled to CDAM methods 26. CDAM methods 26 are public software processes contained within a computer, that enable access to CDAM server 23. A flow chart of the public software process

30 is described in the description of Fig. 2. The output of methods 26 is coupled to Customer Mail application 28. Customer mail application 28 assembles each data field associated with a mailpiece, wherein the address field contains

the address of the recipient. FINALIST and CROSSCHECK are applications programs 27. FINALIST looks for, finds, makes a copy of each and every and all address fields for each mailpiece to be created and CROSSCHECK receives each address field and validates the address field against the United States Postal Service Database. In the event CROSSCHECK finds the address to be valid, CROSSCHECK moves on to the next address. In the event the address is not valid, then and in that event the address is sent to CDAM server 23 to be looked up. FINALIST receives each address field and validates the address field against the United States Postal Service Database. CROSSCHECK and FINALIST are programs licensed by Pitney Bowes Software Systems 4343 Commerce CT, Suite 500, Lisle, Illinois 60532-3618.

The output of mail application 28 is transmitted to generator 29. Generator 29 transmits the message and the correct physical address to router 30. Router 30 is a communications type of computer that requests from CDAM server 23 via CDAM methods 26 the media in which the recipient prefers to receive the specified type of data. Router 30 is the FaxGate, manufactured by Teubner and Associates of P.O. Box 1994 Stillwater, Oklahoma 74076. Router 30 may also be the Dazel, manufactured by the Dazel Corporation of 6034 West Courtyard Drive, Suite 210, Austin Texas 78730.

Router 30 receives from CDAM Server 23 via CDAM methods 26 the carrier and format of the message or data. CDAM server 23 is the HP 9880 manufactured by Hewlett Packard and the CDAM methods shown in block 26 is described in boxes 41, 43, 44, 62, 63 and 64 of Fig. 2. Thereupon, router 30 transmits the physical address and message or information to the selected destination. The selected destination may be facsimile driver 31, or electronic mail driver 32, or internal mail driver 33, or voice driver 34, or mail by phone driver 35, or EDI driver 36, or printer 37, or enterprise digital warehouse 38. Facsimile driver 31, electronic mail driver 32, internal mail driver 33, voice driver 34, mail by phone driver 35, EDI driver 36, and printer 37 are respectively coupled to facsimile server 13, electronic mail server 14, internal mail server 15, voice mail server 16, mail by phone server 17, EDI server 18 and mailroom 19.

Facsimile server 13, electronic mail server 14, internal mail server 15, voice mail server 16, mail by phone server 17, EDI server 18 and mailroom 19 are each individually coupled to the world of recipients by different communication links that are known in the art.

5   Fig. 2 is a flow chart of the Finalist and CROSSCHECK software linkages. When the Finalist Program rejects a name in block 40, this rejection goes to the isolated data paramaterized in block 41. Block 41 isolates the data in the form of parameters. The next step is performed in block 43 i.e., to initialize the CPI-C (Common Program Interface - communication). CPI-C is a

10 program sold by international Business Machine of Armonk, New York.

       At this juncture CDAM methods 26 are used to call CDAM server 23 in block 44. A CPI-C Housekeeping process is performed in block 45. Block 45 feeds block 46 the Look Up Address and Name Data subroutine which is described in greater detail in the description of Fig. 3. The next thing that

15 happens is that the program proceeds to block 47 Found. If the CDAM found the name, meter-link 24 (Fig. 1) is clicked in block 48, signaling the fact that an address value should be recorded. Likewise, for routing a signal indicating routing value should be recorded in meter-link 24. An invoice may be prepared to charge a customer for the amount of times meter-link 24 was clicked. If the

20 CDAM did not find the name, the answer of block 47 is no. After going to block 48 or block 49 the program proceeds to block 50 Setup return of the results to the caller. The next step is performed in block 51, which is Collect Inquiry Audit Data. Thereupon the CDAM collects the original inquiry and does an audit on the data. At this time the program proceeds to block 52 CPI-C?.

25   If the answer in block 52 is yes, the program proceeds to block 53 CPI-C return to caller and the found information goes to block 54 retrieve CDAM results. The next step is performed in block 55 terminate CPI-C conversation. Thereupon, the program proceeds to block 56 Return Results To Finalist. If the answer in block 52 is no, the program proceeds to block 57 RPC return to

30 caller. The program now proceeds to block 58 Retrieve CDAM results. The next step is performed in block 59 terminate RPC conversation. The program goes to block 60 Return results to CROSSCHECK. Thus, If the CPI-C? is yes

in block 52, information is returned to the caller and once again you retrieve the CDAM results, terminate the CPI-C conversation and return to the Finalist program. If the CPI-C is no in block 52 the results are returned to the CROSSCHECK program.

5   When the CROSSCHECK Program rejects a name the program will be at block 61. The next step is to Set isolated properties block 62 and to initialize RPC (Remote Procedure Call) conversation in block 63. The RPC is a UNIX standard. Then the RPC calls the CDAM in block 64 and the RPC housekeeping is performed in block 61 and now the program follows the

10   process hereinbefore described.

Fig. 3 is a flow chart of the Look Up Address and Name Data subroutine, block 46 of Fig. 2. The subroutine starts in block 66 isolate input name line from the other lines. Then, the subroutine builds a table of last names, cities, state, address lines and first names in block 67. Thereupon the

15   program proceeds to block 68 match input, first name to the database, last name, using duplication logic. The duplication logic is used to correct problems where a doctor is named doctor, etc. Then in block 69 the address is chosen based on the closeness of the address line components. The next step is performed in block 70 and indicates a found or not found condition.

20   Fig. 4 is a flowchart that describes how to build the database. In block 71 a third party extracts the name and address from data from the third party database (external data base 20, Fig. 1). Block 71 assumes that someone has walked in with the data base already available, like TRW. At this time in block 72 the address elements in address line data are isolated. Then in block 73

25   the structure for each address line is created with the isolated data, and then in block 74 one isolates the name data and the city, state and Zip code. A table containing last name, city, state, address lines, first names is built in block 75. Then the data is encrypted and stored on the data base in block 76. The contents of block 76 are contained in universal destination catalog 22

30   (described in the description of Fig. 1)

Fig. 5 is a flow chart of the audit database inquiry, that is used to check the reliability of CDAM 26 (described in the description of Fig. 2). This makes

the assumption that there is a database and you have acquired, or are going to acquire, an address, name and address and this teaches one how one might process that and also audit what is going on. The first step is file options block 77. The file options are to open an audit file (block 78); Close an audit file (block 79); Switch audit files (block 80) and create new audit file (block 81). The next step is block 82 view audit file. View audit file is a menu i.e., view entire audit file (block 84) i.e., view number of requests, view number of satisfied request and cost; view by selected ID number (block 85), view by selected date/time (block 86); view selected hits (block 87); and view statistics (block 88) associated with the hits. After blocks 78 to 81 or blocks 84 to 88 are done, one would go block 83 to audit the file.

The above specification describes a new and improved secured method for requesting from a receiver of multi media information, the media in which the receiver would like specified information transmitted. It is realized that the above description may indicate to those skilled in the art additional ways in which the principles of this invention may be used without departing from the spirit. It is, therefore, intended that this invention be limited only by the scope of the appended claims.

Claims:

1. A secured method for changing the routing of a message, said method including the steps of:

5   receiving the correct name and address of a mail recipient;

obtaining the desired media and associated media address in which a recipient would like to receive a message;

determining the media in which a recipient desires to receive the message; and

10   routing the message via the desired media.

2. The method claimed in Claim 1, wherein the step of receiving the correct name and address includes the step of obtaining the postal address.

15   3. The method claimed in Claim 1, wherein the step of receiving the correct name and address includes the step of obtaining the facsimile number.

4. The method claimed in Claim 1, wherein the step of receiving the correct name and address includes the step of obtaining the telephone

20 number.

5. The method claimed in Claim 1, wherein the step of receiving the correct name and address includes the step of obtaining the E-mail address.

25   6. The method claimed in Claim 1, wherein the step of receiving the correct name and address includes the step of obtaining the EDI address.

7. The method claimed in Claim 1, wherein the step of receiving the correct name and address includes the step of obtaining the local area network

30 address.

8. The method claimed in Claim 1, further including the step of metering the number of times a recipient desires to receive a message on a particular media.

9. The method of Claim 8, further including the step of: billing the metering information.

10. A secured method for finding the receiver of a message and for requesting from a receiver of multi media data, the media in which the receiver would like specified data transmitted, said method including the steps of:

receiving the name, destination(s), delivery preferences and demographics of everyone that elects to supply information;

storing the information in a controlled access facility;

copying the stored information;

encrypting one or more copies of the copied information

distributing encrypted copies of the information to senders of the information who have contracted to receive the information;

installing encrypted copies of the information in a server;

accessing the encrypted information to obtain the receivers postal location;

accessing the encrypted information to obtain the preferred media in which the receiver would like to receive the data; and

routing the data to the receivers specified media location.

11. The method claimed in Claim 10, wherein the routing step includes the steps of: transmitting the data and buffering the data.

12. The method of Claim 10, further including the step of: confirming the receiver location when it appears that the location may be incorrect.

13. The method of Claim 10, further including the step of: metering each time the encrypted information is accessed.

14. The method of Claim 13, further including the step of: billing the metering information.

5   15. The method claimed in Claim 10, wherein the step of receiving the delivery preference is via mail.

16. The method claimed in Claim 10, wherein the step of receiving the delivery preference is via facsimile.

10

17. The method claimed in Claim 10, wherein the step of receiving the delivery preference is via telephone.

18. The method claimed in Claim 10, wherein the step of receiving the

15   delivery preference is via E-mail.

19. The method claimed in Claim 10, wherein the step of receiving the delivery preference is via EDI.

20   20. The method claimed in Claim 1, wherein the step of receiving the delivery preference is via the local area network.

21. A secured method for changing the routing of a message substantially as hereinbefore described with reference to the accompanying

25   drawings.

22. A secured method for finding the receiver of a message and for requesting from a receiver of multi-media data the media in which the receiver would like specified data transmitted substantially as hereinbefore described

30   with reference to the accompanying drawings.

Application No:	GB 9618151.6	Examiner:	Keith Williams
Claims searched:	1-22	Date of search:	16 December 1996

Patents Act 1977
Amended Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

    UK Cl (Ed.O): G4A (AUXX); H4K (KOT); H4P (PPEB, PPG)

      Int Cl (Ed.6): G06F 17/60; H04L 12/16, 12/22, 12/24, 12/58; H04M 3/42, 3/50, 11/06; H04Q 7/22

Other: online WPI

Documents considered to be relevant:

Category	Identity of document and relevant passage		Relevant to claims
X,P	WO 95/34972 A1	Motorola Inc. - see page 3, lines 18-29; page 18, lines 15ff (and equivalents US 5509000 and EP 0713622	1,3-7
X	WO 95/12292 A1	Telefon. Ericsson - see page 2, lines 16-24 (and equivalent EP 0677232)	1
X	WO 94/06236 A2	Bellsouth Corp. - see page 6, line 24 to page 7, line 2 (and equivalent EP 0657076)	1,3,4
X	WO 93/07566 A1	Motorola Inc. - see abstract (and equivalent EP 0560965)	1,3,4
X	US 5283887	Bull HN Information Systems - see abstract	1,5
X	US 4837798	AT&T - see column 1, lines 40-50 (and equivalent WO 87/07801)	1,3,4,6,7
X	AU 94/81845 A	AT&T - see eg page 8, lines 3-5	1,3,4,5,7

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
		E	Patent document published on or after, but with priority date earlier than, the filing date of this application.
&	Member of the same patent family		

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